General-Purpose 18-Slot Chassis for PXI

NI PXI-1045

- High-performance 18-slot PXI chassis
- Accepts both 3U PXI and 3U CompactPCI modules
- Software programmable trigger routing between bus segments
- Low jitter (<5 ps) 10 MHz reference clock
- External 10 MHz reference clock with BNC I/O connectors
- Removable, high-performance power supply with universal AC input
- Extended 0 to 55 °C operating range
- Temperature controlled fan speed
- Remote power-inhibit control and voltage monitoring

Options

- Front and rear rack-mount kits
- Replacement power supply and fan shuttle
- Slot blockers for improved cooling performance
- Factory installation services

NEW

High-Performance 18-Slot PXI Chassis

The National Instruments PXI-1045 chassis is a high-power 18-slot chassis designed for a wide range of test and measurement applications. With its large slot capacity and modular structural design, the NI PXI-1045 is well suited for high-channel-count, multi-instrument bench-top or rack-mounted systems. The combination of integrated trigger buses and precise timing features provide the ideal platform for multiple-instrument synchronization and automated testing.

Software System Configuration

The NI PXI-1045 is configured directly through National Instruments Measurement & Automation Explorer (MAX). With this software configuration tool, users can easily configure PXI systems without manual installation of initialization files. With MAX, users can reserve PXI trigger lines on the backplane of the NI PXI-1045, thus preventing instruments from double-driving the trigger lines. In addition, the two trigger routing modules on the PXI-1045 backplane can be programmatically configured to route triggers to and from any of the three bus segments in the chassis.

CompactPCI-Compliant 18-Slot PXI Backplane

The PXI-1045 backplane supports all 3U PXI-compatible devices, as well as standard 3U CompactPCI devices. Three separate bus segments on the backplane of the PXI-1045 are connected with two 64-bit/33 MHz PCI-PCI bridges. Each bus segment on the backplane contains eight PXI trigger lines for routing timing and synchronization signals. The backplane also includes a dedicated matched trace-length star trigger line for passing precise trigger signals from slot 2 to slots 3 through 15 with less than 1 ns of skew.

10 MHz System Reference Clock

A low jitter (<5 ps) 10 MHz system reference clock is supplied to each peripheral slot of the PXI-1045 18-slot chassis. The internal system reference clock, with a skew of less than 250 ps between slots, can be used to synchronize multiple devices and perform unique phase-correlated measurements. External reference clocks, which are automatically detected by the chassis backplane, can be sourced with a precise PXI timing device in slot 2 of the NI PXI-1045 chassis (such as the NI PXI-6608 32-bit counter/timer) or an imported 10 MHz source on the BNC connector on the rear of the chassis.

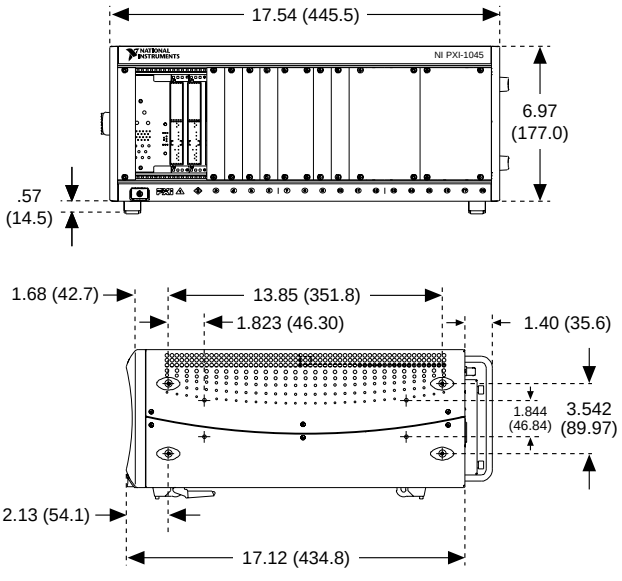

Figure 1. PXI-1045 Front and Side Dimensions in Inches (mm)

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General-Purpose 18-Slot Chassis for PXI

NI PXI-1045 Options

The PXI-1045 has a number of optional accessories for complete system integration and optimized chassis functionality. Front and rear rack-mount kits are available for 19 in. rack mounted systems. Spare power supplies are easily replaced with little system downtime because of the modular nature of the PXI-1045 power supply and fan shuttle. Slot blockers can be used to improve the overall cooling performance of the chassis. For online configuration of a complete PXI system, including information about factory installation services, visit the PXI Advisor at ***ni.com/advisor***

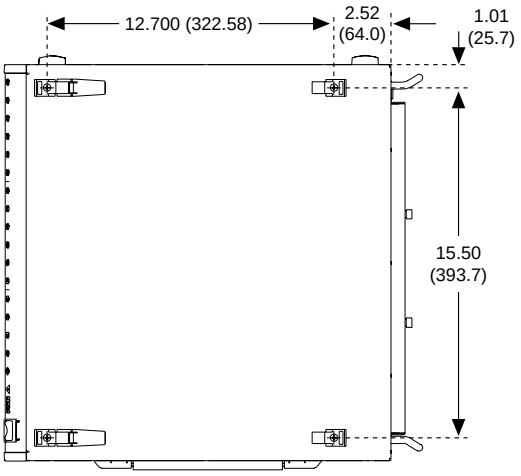
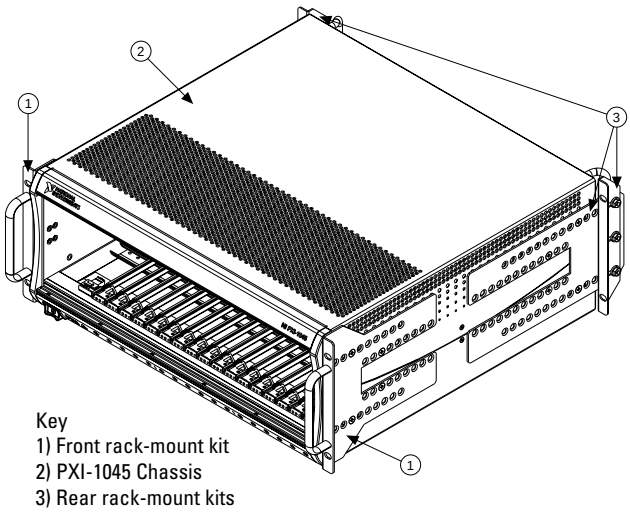


Figure 2. PXI-1045 Bottom Dimensions in Inches (mm)



Key
1) Front rack-mount kit
2) PXI-1045 Chassis
3) Rear rack-mount kits

Figure 3. PXI-1045 Chassis with Optional Front and Rear Rack Mount Kits

Ordering Information

Step 1. Select your chassis.
NI PXI-1045 778645-01

Step 2. Select one or more power cords.
U.S. 120 VAC 763000-01
Japan 100 VAC.....763000-01
United Kingdom 240 VAC.....763064-01
Swiss 220 VAC 763065-01
Australian 240 VAC.....763066-01
Universal Euro 240 VAC 763067-01
North American 240 VAC.....763068-01

Step 3. Select additional accessories.
Front rack-mount kit (for 19 in. rack) 778644-01
Rear rack-mount kit (for 19 in. rack).....778644-02
Spare power supply and fan shuttle.....778647-01
Filler panel kit* (7 single-slot, 1 double-slot, and 2 quadruple slot) 778646-01
Slot blockers** (2 single-slot) 778678-01
*Every PXI-1045 includes a filler panel kit **Slot blockers are optional for improved thermal performance of your PXI-1045 system. Refer to PXI-1045 user manual for more information.

Step 4. Select system setup and installation services.
If you are ordering this chassis as part of a system, select NI Factory Installation Services to have your hardware/software installed and receive your new PXI system ready to use right out of the box.
NI Factory Installation Services – PXI Systems 960596-01

BUY ONLINE!
Visit ni.com/info and enter pxi1045.

General-Purpose 18-Slot Chassis for PXI

Specifications

Complies with PXI 2.1 Specification
Accepts modules compliant with CompactPCI, PICMG 3.0 specification

Electrical

AC Input
- Input voltage range ..... 100-240 VAC universal
- Operating voltage range ..... 90-264 VAC
- Input frequency ..... 50/60 Hz
- Operating frequency range ..... 47-63 Hz

DC Output

DC current capacity (IMP)

Voltage	0-45°C	0-50°C	0-55°C
+3.3 V	40 A	37 A	32 A
+5 V	59 A	55 A	48 A
+12 V system slot	0.5 A	0.5 A	0.5 A
+12 V peripheral slots	8.5 A	8.5 A	8 A
-12 V	4.5 A	4.5 A	4.5 A

Load regulation

Voltage	Load Regulation
+3.3 V	<1%
+5 V	<1%
+12 V	<1%
-12 V	<1%

Maximum ripple and noise ..... 20 MHz bandwidth

Voltage	Load Regulation
+3.3 V	50 mV_{pp}
+5 V	50 mV_{pp}
+12 V	120 mVpp
-12 V	120 mVpp

Cooling

- Fans ..... 3 @ 140 cfm, Auto/High speed selector
- Air filters ..... Rear accessible
- Per-slot capacity ..... 24 W with fan speed on High
- Power supply cooling ..... Forced air via integrated fan

Physical

- Number of PXI slots ..... 18 (1 system controller, 17 peripheral)
- Number of system controller expansion slots ..... 3 (left of system controller slot)
- Dimensions ..... 177 mm x 445.5 mm x 434.8 mm (6.97 in. x 17.54 in. x 17.12 in.)
- Height for rack-mount installation ..... 4U (approximately 133.3 mm)
- Empty chassis weight ..... 12.6 kg (27.8 lb)

Operating Environment

- Operating temperature ..... 0 to 55 °C
- Relative humidity ..... 10 to 90% noncondensing
- Altitude ..... 2000 m

Storage Environment

- Storage temperature ..... -20 °C to 70 °C
- Relative humidity ..... 5 to 95% noncondensing

Backplane

- Number of PXI-to-PXI bridges 2
- PXI-to-PXI bridge locations ..... Between slots 6-7, slots 12-13
- PXI trigger bus segments ..... 3 (slots 1-6, 7-12, 13-18)
- PXI peripheral slots on star trigger bus ..... Slots 3-15
- PXI peripheral slots with access to 10 MHz reference clock ..... All
- Backplane bare-board material ..... UL 94V-0 recognized
- Backplane connector ..... Conforms to IEC-917 and IEC 1076-4-101, UL 94V-0 recognized

10 MHz System Reference Clock

- Maximum clock skew between slots ..... 250 ps

Built-in 10 MHz clock
- Accuracy ..... ±25 ppm
- Maximum jitter ..... 5 ps_{rms} in 10 Hz to MHz range

External clock sources
- Connectors ..... BNC on rear of chassis (ground referenced) or slot 2
- Input frequency ..... 10 MHz ±100 ppm
- Input amplitude
  - Rear connector ..... 200 mV_{pp} to 5 V_{pp}, 10 MHz squarewave or sinewave
  - Slot 2 ..... 5 V or 3.3 V, 10 MHz TTL signal
- Input impedance ..... 50 Ω ± 5 Ω (rear connector)
- Maximum jitter introduced by backplane circuitry ..... 1 ps_{rms} in 10 Hz to 1 MHz range

External Clock Output

- Connector ..... BNC on rear of chassis (ground referenced)
- Output amplitude ..... 1 V_{pp} ±20% squarewave into 50 Ω, 2 V_{pp} into open circuit
- Output impedance ..... 50 Ω ± 5 Ω

Shock and Vibration

- Operating shock ..... 30 g peak, half sine, 11 ms pulse (Tested in accordance with IEC-60068-2-27. Test profile developed in accordance with MIL-T-28800E)
- Non-operating shock ..... 50 g_{peak}, half sine, 11 ms pulse

Random Vibration
- Operating ..... 5 – 500 Hz, 0.31 g_{rms} (Tested in accordance with IEC-60068-2-64. Nonoperating test profile developed in accordance with MIL-T-28800E and MIL-STD-810E Method 514)
- Non-operating ..... 5 – 500 Hz, 2.46 g_{rms}

Safety

The PXI-1045 18-slot chassis was evaluated using the criteria of EN 61010-1 and meets the requirements of the following standards for safety and electrical equipment for measurement, control, and laboratory use:
- EN 61010-1, IEC 61010-1
- UL 3111-1, UL 61010B-1
- CAN/CSA C22.2 no. 1010.1

Note: UL and other safety certifications are marked on the chassis and available at ni.com.

Electromagnetic Compatibility

- EMC ..... CE, C-Tick, FCC Part 15 (Class A) Compliant
- Electro-Magnetic Emissions ..... EN 55011 Class A @ 10 m FCC Part 15A above 1 GHz
- Electro-Magnetic Immunity ..... Evaluated to EN 61326:1997 + A2:2001, Table 1

Note: For full EMC compliance, you must operate this device with shielded cabling. In addition, all covers and filler panels must be installed on empty slots.

CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE marking, as follows:
- Low-Voltage Directive (safety) 73/23/EEC

Electromagnetic Compatibility
- Directive (EMC) 89/336/EEC

Note: Refer to Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain a DoC for this product, click Declarations of Conformity Information at ***ni.com/hardref.nsf/***

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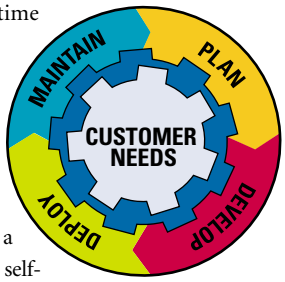
Training and Certification



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